18. (Amended) A method of processing radio frequency (RF) signals, the method comprising the steps of:

receiving an input RF signal;

mixing said input RF signal with an operating frequency signal to generate a first signal;

filtering said first signal to generate a second signal;

amplifying to a fixed level said second signal to generate a third signal;

filtering said third signal to generate a fourth signal; and

amplifying said fourth signal a fixed amount to generate a fifth signal; wherein said mixing, filtering and amplifying steps are performed on a single integrated substrate.

A7

21. (Amended) A method of processing RF signals as recited in claim 20, wherein said step of amplifying said fourth signal to generate a fifth signal includes amplifying said fourth signal by [an] a fixed gain amplifier (FGA).

A8

REMARKS

Claims 1-21 are pending in the present Application and have been rejected by the Examiner. The issues in the Office Action dated October 9, 1997, are:

-- The drawings are objected to as unclear;

-- The disclosure is objected to for informalities;

-- Claims 1, 4, 7, 10, 13, 15, 17, 18 and 21 are objected to for informalities;

-- Claims 13, 15-18, 20 and 21 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,361,395 to Yamamoto (Yamamoto);

-- Claims 14 and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yamamoto; and

-- Claims 1-12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yamamoto in view of U.S. Patent No. 5,491,507 to Umezawa et al. (Umezawa).

Objections to the Drawings

The Examiner has objected to the drawings as unclear as to whether the reference lines are intended to be inputs to the various circuit components.

Applicant has submitted amended drawings to distinguish the reference lines from the circuit inputs. Corrections to the amended drawings are indicated in red ink as required under M.P.E.P. § 608.02(v). Applicant will submit formal drawings upon allowance of the present application. A copy of the amended drawings have been forwarded to the Official Draftsman under separate letter. The amendments to the drawings add no new matter to the application.

Objections to the Disclosure

The disclosure is objected to because of informalities. Applicant has amended the disclosure to incorporate the Examiner's suggestion to define certain acronyms that are used in the disclosure. Applicant has also corrected a typographical error on page 9 of the disclosure. The amendments to the disclosure add no new matter to the application.

Objections to the Claims

The Examiner has objected to claims 1, 4, 7, 10, 13, 15, 17, 18 and 21 for various informalities. Applicant has amended claims 1, 4, 7, 10, 13, 15, 17, 18 and 21 as suggested by the Examiner to clarify acronyms that were included in the claim language.

Rejections under 35 U.S.C. § 102(b) - Yamamoto

The Examiner has rejected claims 13, 15-18, 20 and 21 under 35 U.S.C. § 102(b) as being anticipated by Yamamoto. Applicant has amended independent claims 13 and 18 to expressly include the limitation that the claimed RF processing circuit and method are performed on a single integrated substrate. Although Yamamoto discloses elements of an intermediate frequency signal processor, it does not teach that the elements are constructed on a single integrated substrate as required in claims 13 and 18, as amended. M.P.E.P. § 2131 states that "to anticipate a claim, the reference must teach every element of the claim." Therefore, the Yamamoto reference cannot anticipate independent claims 13 or 18 since it does not teach the claimed element of a single integrated substrate or a monolithic circuit.

The Yamamoto invention is directed to controlling an automatic gain control (AGC) circuit in a mobile telephone receiver. The Yamamoto disclosure contains twelve figures, and their related descriptions, which show various circuits that employ the AGC circuit. However, despite the numerous combinations of elements that are shown, Yamamoto fails to include any discussion of design considerations for any of the embodiments. Most pertinent to the present application is the lack of any discussion related to an integrated embodiment of the Yamamoto receiver circuit. Thus, the disclosure lacks any reference to integrated circuit design considerations, such as detrimental noise characteristics or the problems inherent in the electronic coupling between elements that are integrated on the same substrate. Accordingly, it is apparent that the Yamamoto reference does not contemplate constructing the claimed elements on a single integrated substrate. Thus, independent claims 13 and 18, and dependent claims 14-17 and 19-21, are not anticipated by Yamamoto.

Rejections under 35 U.S.C. § 103(a) - Yamamoto

The Examiner has rejected claims 14 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto. As discussed above with respect to the § 102(b) rejections, Yamamoto fails to anticipate independent claims 13 and 18 or dependent claims 14-17 and 19-21. Applicant submits that the modifications and motivations suggested by the Examiner are not sufficient to establish obviousness.

In the rejection of claims 14 and 19, the Examiner states that "using a low-pass filter instead of a band-pass filter is a design preference as it is well established that the low-pass filter generally possess all of the same characteristics of band-pass filter" (sic) (page 5, lines 5-7). Applicant traverses this statement and requests, in accordance with M.P.E.P. § 2144.03, that the Examiner provide a prior art reference which supports the proposition that a low-pass filter is equivalent to a band-pass filter. If, instead, the rejection is based upon facts within the personal knowledge of the Examiner, then Applicant requests that the Examiner provide an affidavit in accordance with 37 C.F.R. § 1.104(d)(2).

In the § 103(a) rejection, the Examiner further states that it would have been obvious to substitute a low-pass filter for Yamamoto's band-pass filter because low-

pass filters cost less than band-pass filters. Applicant also traverses this rejection and requests that the Examiner provide a reference or affidavit to support the proposition that switching low-pass and band-pass filters merely based upon cost considerations is well known or even possible.

Band-pass and low-pass filters have distinctly different functions and design considerations. One who is skilled in the art would not replace a band-pass filter with a low-pass filter merely based upon a cost consideration. Nothing in the cited prior art suggests that skilled artisans would ignore operational considerations in choosing a filter design. Applicant submits that the teachings of Yamamoto do not establish a *prima facie* case of obviousness under M.P.E.P. § 2143. Therefore, the present claims are patentable over the Yamamoto reference under 35 U.S.C. § 103(a).

Rejections under 35 U.S.C. § 103(a) - Yamamoto/Umezawa

The Examiner has rejected claims 1-12 under 35 U.S.C. § 103(a) as unpatentable over Yamamoto in view of Umezawa. Claims 1-12 are directed to a video signal processing circuit. Yamamoto discloses an AGC circuit for receiving audio signals on a mobile telephone. The Examiner suggests that Umezawa teaches a device for receiving and transmitting video signals. Applicant traverses the use of the Yamamoto and Umezawa combination to render claims 1-12 obvious.

The Umezawa reference discloses five physical embodiments of a mobile video telephone (first embodiment begins, column 5, line 26; second embodiment, column 12, line 13; third embodiment, column 14, line 62; fourth embodiment, column 16, line 46; fifth embodiment, column 18, line 37). Umezawa is little more than a design patent for a mobile phone. The extent of the disclosure that relates to signal processing is the identification of a "main circuit board 17 which includes a processor and a memory" (column 5, lines 56-57). Main circuit board 17 is shown as a nondescript box in the drawings for the first embodiment (Figures 3 and 4) and it is not shown at all in the drawings for the other embodiments.

The Umezawa disclosure contains no discussion of a circuit, apparatus or method for signal processing. However, the Umezawa claims do include "signal processing means for permitting at least either of a vocal communication or a visual

communication." 35 U.S.C. § 112, paragraph six, states that a "means for" claim element is "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." In view of § 112, the "signal processing means" of Umezawa only covers the amorphous block labeled 17 in Figures 3 and 4. This disclosure is clearly insufficient to teach any form of video or visual communications signal processing, except perhaps to show the concept that some form of visual signal processing is possible within the realm of mobile telecommunications.

M.P.E.P. § 2143.01 requires that there be some suggestion or motivation to combine prior art references in order to establish obviousness. There is no motivation to combine the non-enabling Umezawa disclosure with other references because experimentation is the only way one skilled in the art could make or use the Umezawa device. The Examiner admits that Yamamoto does not teach visual communications (Office Action, page 6, lines 3-4). Therefore, at best, if one skilled in the art looked to Yamamoto, they would only find a "signal processing means for permitting . . . a vocal communication" and looking to Umezawa one could find (at best) a visual processor for use within the mobile telephone spectrum. Even if the Examiner could show motivation to make this combination, it would not yield the claimed video signal processing circuit as required by claims 1-12.

M.P.E.P. § 2143.03 requires that all claim limitations must be taught or suggested by the prior art for a *prima facie* case of obviousness. The Yamamoto and Umezawa references not only fail to teach or suggest a monolithic or integrated circuit, as discussed above, but they also fail to teach or suggest any form of <u>video</u> signal processing. This follows since it is well known that mobile telephone system channels have a narrow bandwidth, on the order of 25 kHz, and may carry one or more multiplexed audio signals. On the other hand, video signals, such as television signals, have a broader bandwidth, on the order of 6 MHz, and contain distinct, concurrent components, such as a color carrier and an audio carrier. Nothing in the Yamamoto or Umezawa references teaches or suggests that a receiver for a mobile telephone can be used to receive video signals and certainly one skilled in the art would not look to the mobile telephone art for wide-band video processing.

In view of the preceding remarks, Applicant submits that the combination of Yamamoto and Umezawa cannot satisfy the requirements of a *prima facie* case of obviousness under M.P.E.P. § 2143. Therefore, claims 1-12 are allowable over the cited references under 35 U.S.C. § 103(a) and should be passed to issue.

Applicant respectfully requests that the Examiner call the below listed attorney if the Examiner believes that such a discussion would be helpful in resolving any remaining problems.

Respectfully submitted,

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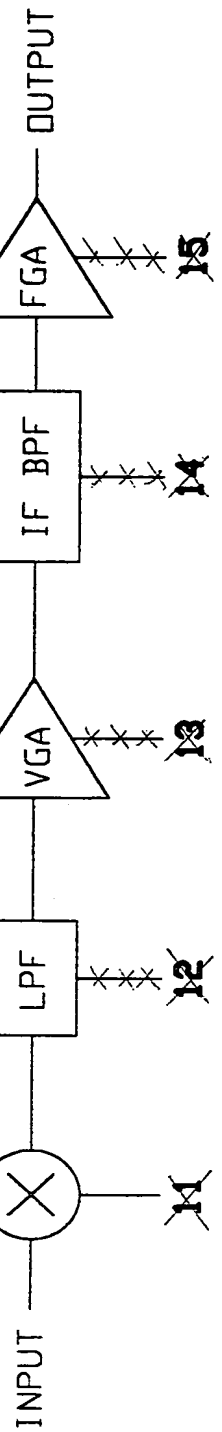

Figure 1.

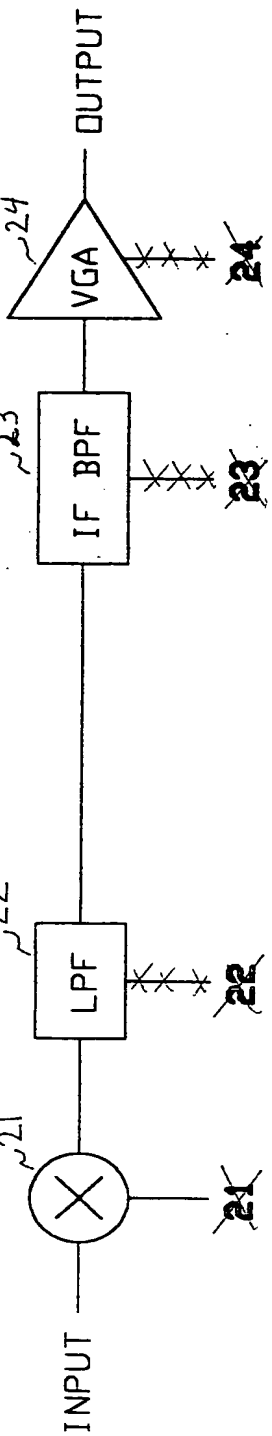

Figure 2.
Prior Art